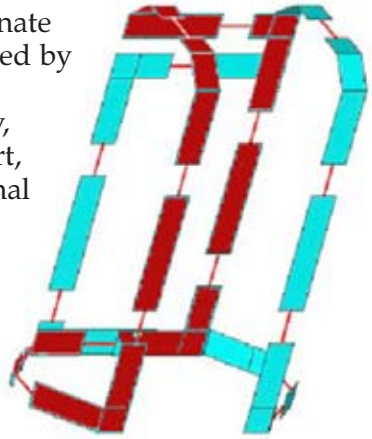
Body Worn Squad Level Antenna

Overview:

A rigid Merenda double-loop antenna has been transformed into a **wearable, flexible, textile based antenna** that is compatible with SINCGARS (Single Channel Ground and Airborne Radio System), and has been integrated into the MOLLE (Modular Lightweight Load-carrying Equipment) vest. It has advantages over the 30-inch whip antenna in that it is body conformal and visually covert, not compromising the soldier's silhouette. CECOM, a partner in the effort, has provided related prototype electronic switching devices, which were also integrated into the vest. A performance evaluation of the vest will be performed in FY02 at the Electronic Proving Ground, Fort Huachuca, Arizona. A follow-on safety assessment is planned for FY03.

Description:

Maintaining communications on the battlefield is critical to coordinate and control units and firepower. Radio operators are easily identified by their protruding antennas and are prime targets. In addition, the antennas are easily broken by trees and bushes, limit their mobility, and are relatively inefficient radiators. A body worn, visually covert, textile based antenna is being developed to address these operational issues. The antenna is compatible with SINCGARS (30 to 88 MHz) and is a joint effort with CECOM, supporting their advanced antenna and communications science and technology objectives (STOs). The double loop antenna developed by NSC, and 16 electronic switching modules developed by CECOM, have been integrated into the MOLLE vest.



Status:

Prototype antenna vests will be tested and evaluated for performance (transmission and receive) and safety over the next calendar year. CECOM will verify RF communications performance with SINCGARS in a variety of positions including standing, kneeling, and prone. Their safety assessment will include the measurement of specific absorbency rates, and depth of penetration measurements, which will be compared to related safety standards. If the performance and safety evaluation demonstrates acceptable performance, CECOM has agreed to investigate further miniaturization of the electronic modules.

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